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RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 2000	
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0708011F Industrial Preparedness				PROJECT 672865	
COST (\$ in Thousands)	FY 1999 Actual	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
672865 Manufacturing Technology	50,597	51,988	53,082	53,600	54,193	55,369	56,279	Continuing	TBD
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0
<p>(U) <u>A. Mission Description</u> The Manufacturing Technology (ManTech) program is a corporate Air Force program that establishes and demonstrates advancements in manufacturing process technologies, manufacturing engineering systems, and industrial practices, and transitions these advancements into weapon systems design, development, acquisition, and/or sustainment. ManTech provides cost reduction processes and practices and new manufacturing capabilities applicable to existing as well as new weapon systems under development. ManTech strives to make superior mission enabling technologies an affordable life cycle reality by expanding access to a capable, responsible, multi-use industrial base with efficiencies comparable to world class enterprises. Program efforts accelerate shop floor manufacturing process maturation, at every stage of development, through increased emphasis on cost, time, and quality risks in transition. Best processes are evaluated and adapted for application. Where mature processes are not available, laboratory-developed initial process capabilities are matured and inserted into weapon system programs. ManTech goes beyond just factory floor manufacturing/repair processes and encompasses every activity within an industrial enterprise, ranging from above the shop floor activities, including tools for integrated product process development (IPPD), to supplier base interactions and performance. The strategies and best practices of world-class enterprises are analyzed and the performance of defense suppliers benchmarked. The world's best industrial practices are adapted and validated in multiple pilot projects and deployed in defense applications. Project efforts address and target all industry levels, from large prime contractors to small material and parts vendors. Program efforts also enhance repair/remanufacture capabilities to affordably sustain the aging weapon systems inventory, thereby reducing total ownership costs.</p>									
<p>(U) <u>FY 1999 (\$ in Thousands)</u></p>									
(U) \$28,525	Established and demonstrated cost-effective and efficient manufacturing technologies for critical, high quality, reliable structural, propulsion, and electronic components and assemblies required for existing and next generation aircraft. Conducted pilot efforts in high-payoff endeavors aimed at validating potential benefits from flexible manufacturing, commercial/military integration, quality processing, and supplier improvements. Conducted long-term projects focused on IPPD tools.								
(U) \$16,107	Established and demonstrated cost-effective repair and manufacturing technologies to affordably sustain existing weapon systems and to enhance mission readiness. Reduced repair and maintenance cycle time for aging systems and established remanufacturing capabilities able to rapidly generate standardized replacement parts on demand.								
(U) \$1,445	Established and demonstrated efficient and cost-effective manufacturing methods for high performance, high reliability electronics, lightweight structures, and efficient propulsion methods for advanced tactical missiles. Established manufacturing improvements required to transition precision-guided munitions subsystems into production. Conducted pilot efforts in high-payoff endeavors aimed at validating potential benefits								
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<p>(U) <u>A. Mission Description Continued</u></p> <p>(U) <u>FY 1999 (\$ in Thousands) Continued</u></p> <p>(U) \$4,520 accrued from inserting best practices in production of weapon systems. Established and demonstrated affordable, flexible manufacturing processes to reduce the cost and lead time of higher performance spacecraft and launch vehicles. Established effective and efficient manufacturing technology for critical high quality, reliable electronic components and assemblies required for surveillance, tracking communications links, and data/signal processing. Conducted pilot efforts in high-payoff endeavors aimed at providing efficient, low-cost capability to produce components and weapon systems in the space, launch, and Command, Control, Communications, and Intelligence (C3I) industrial base sectors.</p> <p>(U) \$50,597 Total</p> <p>(U) <u>FY 2000 (\$ in Thousands)</u></p> <p>(U) \$20,225 Establish and demonstrate cost-effective and efficient manufacturing technologies for critical, high quality, reliable structural, propulsion, and electronic components and assemblies required for existing and next generation aircraft. Conduct pilot efforts in high-payoff endeavors aimed at validating potential benefits accrued from flexible manufacturing, commercial/military integration, quality processing, and supplier improvements. Conduct long-term projects focused on integrated product process development (IPPD) tools. Efforts include Phase II of the Forging Supplier Initiative and continuance of the Composites Affordability Initiative, aimed at providing 50% cost reduction in fighter aircraft structures.</p> <p>(U) \$22,799 Establish and demonstrate cost-effective repair and manufacturing technologies for affordable sustainment of existing weapon systems and to enhance mission readiness. Reduce repair and maintenance cycle time for aging systems and establish remanufacturing capabilities which will rapidly generate standardized replacement parts on demand. Establish process improvements for repair/remanufacture of large area structures on legacy aircraft.</p> <p>(U) \$1,515 Establish and demonstrate efficient and cost-effective manufacturing methods for high performance, high reliability electronics, lightweight structures, and efficient propulsion methods for advanced tactical missiles. Establish manufacturing improvements required to transition precision-guided munition subsystems into production. Conduct pilot efforts in high-payoff endeavors aimed at validating potential benefits accrued from inserting best practices in the production of weapon systems.</p> <p>(U) \$6,949 Establish and demonstrate affordable, flexible manufacturing processes to reduce the cost and lead time of higher performance spacecraft and launch vehicles. Establish effective and efficient manufacturing technology for critical high quality, reliable electronic component and assemblies required for surveillance, tracking communications links, and data/signal processing. Conduct pilot efforts in high-payoff endeavors aimed at providing efficient, low-cost capability to produce components and weapon systems in the space, launch, and Command, Control, Communications, and Intelligence (C3I) industrial base sectors. Initiate effort to rapidly respond to space sector manufacturing issues.</p> <p>(U) \$500 Start and complete nickel metal-hydride replacement battery effort.</p>		
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BUDGET ACTIVITY 07 - Operational System Development	PE NUMBER AND TITLE 0708011F Industrial Preparedness	PROJECT 672865
<p>(U) <u>A. Mission Description Continued</u></p> <p>(U) <u>FY 2000 (\$ in Thousands) Continued</u></p> <p>(U) \$51,988 Total</p> <p>(U) <u>FY 2001 (\$ in Thousands)</u></p> <p>(U) \$19,402 Establish and demonstrate cost-effective and efficient manufacturing technologies for critical, high quality, reliable structural, propulsion, and electronic components and assemblies required for existing and next generation aircraft. Conduct pilot efforts in high-payoff endeavors aimed at validating potential benefits accrued from flexible manufacturing, commercial/military integration, quality processing, and supplier improvements. Conduct long-term projects focused on integrated product process development (IPPD) tools. Initiate effort to catalog and implement lean concepts. Start activity focused on modeling and simulation techniques for manufacturing enterprises.</p> <p>(U) \$21,855 Establish and demonstrate cost-effective repair and manufacturing technologies for affordable sustainment of existing weapon systems and to enhance mission readiness. Reduce repair and maintenance cycle time for aging systems and establish remanufacturing capabilities which will rapidly generate standardized replacement parts on demand. Initiate effort to address technologies for turbine engine life extension.</p> <p>(U) \$1,315 Establish and demonstrate efficient and cost-effective manufacturing methods for high performance, high reliability electronics, lightweight structures, and efficient propulsion methods for advanced tactical missiles. Establish manufacturing improvements required to transition precision guided munition subsystems into production. Conduct pilot efforts in high-payoff endeavors aimed at validating potential benefits accrued from inserting best practices in the production of weapon systems. Initiate project to establish affordable manufacturing processes for microelectronic machined structures (MEMS) applied to inertial measurement units.</p> <p>(U) \$10,510 Establish and demonstrate affordable, flexible manufacturing processes to reduce the cost and lead time of higher performance spacecraft and launch vehicles. Establish effective and efficient manufacturing technology for critical high quality, reliable electronic component and assemblies required for surveillance, tracking communications links, and data/signal processing. Conduct pilot efforts in high-payoff endeavors aimed at providing efficient, low-cost capability to produce components and weapon systems in the space, launch, and Command, Control, Communications, and Intelligence (C3I) industrial base sectors. Continue efforts to rapidly respond to space sector manufacturing issues.</p> <p>(U) \$53,082 Total</p> <p>(U) <u>B. Budget Activity Justification</u></p> <p style="padding-left: 20px;">This program is in Budget Activity 7, Operational System Development, because it provides support to systems in production and/or operational use.</p>		
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BUDGET ACTIVITY 07 - Operational System Development					PE NUMBER AND TITLE 0708011F Industrial Preparedness					PROJECT 672865							
(U) <u>C. Program Change Summary (\$ in Thousands)</u>																	
					<u>FY 1999</u>		<u>FY 2000</u>		<u>FY 2001</u>		<u>Total Cost</u>						
(U)	Previous President's Budget (FY 2000 PBR)				52,351		51,814		53,480								
(U)	Appropriated Value				52,997		52,314										
(U)	Adjustments to Appropriated Value																
	a. Congressional/General Reductions				-646		-40										
	b. Small Business Innovative Research				-1,396												
	c. Omnibus or Other Above Threshold Reprogram						-286										
	d. Below Threshold Reprogram				-70												
	e. Rescissions				-288												
	f. Other										TBD						
(U)	Adjustments to Budget Years Since FY 2000 PBR								-398								
(U)	Current Budget Submit/FY 2001 PBR				50,597		51,988		53,082		TBD						
(U)	<u>Significant Program Changes:</u>																
	Not Applicable.																
(U) <u>D. Other Program Funding Summary (\$ in Thousands)</u>																	
		<u>FY 1999</u>	<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2002</u>		<u>FY 2003</u>		<u>FY 2004</u>		<u>FY 2005</u>		<u>Cost to</u>		<u>Total Cost</u>
		<u>Actual</u>	<u>Estimate</u>		<u>Estimate</u>		<u>Estimate</u>		<u>Estimate</u>		<u>Estimate</u>		<u>Estimate</u>		<u>Complete</u>		
(U)	AF RDT&E																
(U)	Other APPN																
	Not Applicable.																
(U) <u>E. Acquisition Strategy</u>																	
	All major contracts in this Program Element were awarded after full and open competition.																
(U) <u>F. Schedule Profile</u>																	
					<u>FY 1999</u>					<u>FY 2000</u>					<u>FY 2001</u>		
					1	2	3	4	1	2	3	4	1	2	3	4	
(U)	Not Applicable.																

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)								DATE February 2000		
BUDGET ACTIVITY 07 - Operational System Development				PE NUMBER AND TITLE 0708011F Industrial Preparedness				PROJECT 672865		
(U) <u>A. Project Cost Breakdown (\$ in Thousands)</u>										
				FY 1999	FY 2000	FY 2001				
(U) Manufacturing technologies for aircraft components				28,525	20,225	19,402				
(U) Repair/remanufacture technologies for weapon system sustainment				16,107	22,799	21,855				
(U) Manufacturing methods for missile and munition assemblies				1,445	1,515	1,315				
(U) Manufacturing processes to reduce spacecraft and launch vehicle costs				4,520	6,949	10,510				
(U) Nickel Metal-Hydride Replacement Battery effort				0	500	0				
(U) Total				50,597	51,988	53,082				
(U) <u>B. Budget Acquisition History and Planning Information (\$ in Thousands)</u>										
(U) <u>Performing Organizations:</u>										
<u>Contractor or</u>		<u>Contract</u>								
<u>Government</u>		<u>Method/Type</u>		<u>Award or</u>		<u>Performing</u>		<u>Project</u>		
<u>Performing</u>		<u>or Funding</u>		<u>Obligation</u>		<u>Activity</u>		<u>Office</u>		<u>Total Prior</u>
<u>Activity</u>		<u>Vehicle</u>		<u>Date</u>		<u>EAC</u>		<u>EAC</u>		<u>to FY 1999</u>
<u>Budget</u>		<u>Budget</u>		<u>Budget</u>		<u>Budget</u>		<u>Budget to</u>		<u>Total</u>
<u>FY 1999</u>		<u>FY 2000</u>		<u>FY 2001</u>		<u>FY 2001</u>		<u>Complete</u>		<u>Program</u>
<u>Product Development Organizations</u>										
Numerous		Various		Various		N/A		N/A		28,280
Howmet		Cost Share		Jul 95		N/A		N/A		26,353
Ontek		CPFF		Jan 95		N/A		N/A		23,837
Composites Affordability Initiative (Consortium)		CA		Aug 97		N/A		N/A		Continuing
Sustainment Initiative		Various		Various		N/A		N/A		500
Engine Forging Initiative		Various		May 99		N/A		N/A		TBD
Parts Obsolescence Initiative		Various		Various		N/A		N/A		11,250
Small/Medium Supplier Initiative		Various		Various		N/A		N/A		4,000
ManTech for Affordable Spacecraft		Various		Various		N/A		N/A		3,000
Laser Shock Peening, Inc		CS		Aug 98		N/A		N/A		0
Coherent Technology, Inc		CS		Jun 97		N/A		N/A		1,452
										0
										6,900
										13,055
										5,890
										4,070
										3,300
										0
										26,315
										0
										2,430
										5,120
										6,820
										13,939
										28,309
										0
										1,200
										2,300
										3,000
										2,500
										9,000
										0
										3,120
										4,995
										5,375
										6,107
										19,597
										0
										300
										1,800
										2,000
										5,527
										9,627
										0
										1,875
										2,350
										3,650
										4,265
										12,140
										0
										350
										1,350
										1,750
										1,600
										0
										0
										2,350

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RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3)					DATE February 2000	
BUDGET ACTIVITY		PE NUMBER AND TITLE			PROJECT	
07 - Operational System Development		0708011F Industrial Preparedness			672865	
(U) <u>Performing Organizations Continued:</u>						
<u>Support and Management Organizations</u>						
In house support						
<u>Test and Evaluation Organizations</u>						
		<u>Total Prior</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget</u>	<u>Budget to</u>
<u>Subtotals</u>		<u>to FY 1999</u>	<u>FY 1999</u>	<u>FY 2000</u>	<u>FY 2001</u>	<u>Complete</u>
Subtotal Product Development		31,503	50,597	51,988	53,082	TBD
Subtotal Support and Management						
Subtotal Test and Evaluation						
Total Project		31,503	50,597	51,988	53,082	TBD

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